
Appendix for the Report

Dosimetric Assessment of the BenQ Siemens A31a (FCC ID: PWX-A31a)

According to the FCC Requirements

SAR Distribution Plots

February 02, 2006
IMST GmbH
Carl-Friedrich-Gauß-Str. 2
D-47475 Kamp-Lintfort

Customer
BenQ Denmark AsP
Siemens Kaj 1
DK-9400 Norresundby

The test results only relate to the items tested.
This report shall not be reproduced except in full without the written
approval of the testing laboratory.

Table of Contents

1	SAR DISTRIBUTION PLOTS, GSM 850 HEAD.....	3
2	SAR DISTRIBUTION PLOTS, PCS 1900 HEAD	11
3	SAR DISTRIBUTION PLOTS, GSM 850 BODY GSM MODE	15
4	SAR DISTRIBUTION PLOTS, GSM 850 BODY IN GPRS MODE.....	17
5	SAR DISTRIBUTION PLOTS, GSM 1900 BODY GSM MODE.....	19
6	SAR DISTRIBUTION PLOTS, GSM 1900 BODY IN GPRS MODE.....	21
7	SAR Z-AXIS SCANS (VALIDATION)	23
8	SAR Z-AXIS SCANS (MEASUREMENTS).....	25

1 SAR Distribution Plots, GSM 850 Head

Test Laboratory: Imst GmbH; File Name: [991yalm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.862 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.2 V/m; Power Drift = -0.164 dB

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.603 mW/g

Maximum value of SAR (measured) = 0.911 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.2 V/m; Power Drift = -0.164 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.792 mW/g; SAR(10 g) = 0.539 mW/g

Maximum value of SAR (measured) = 0.849 mW/g

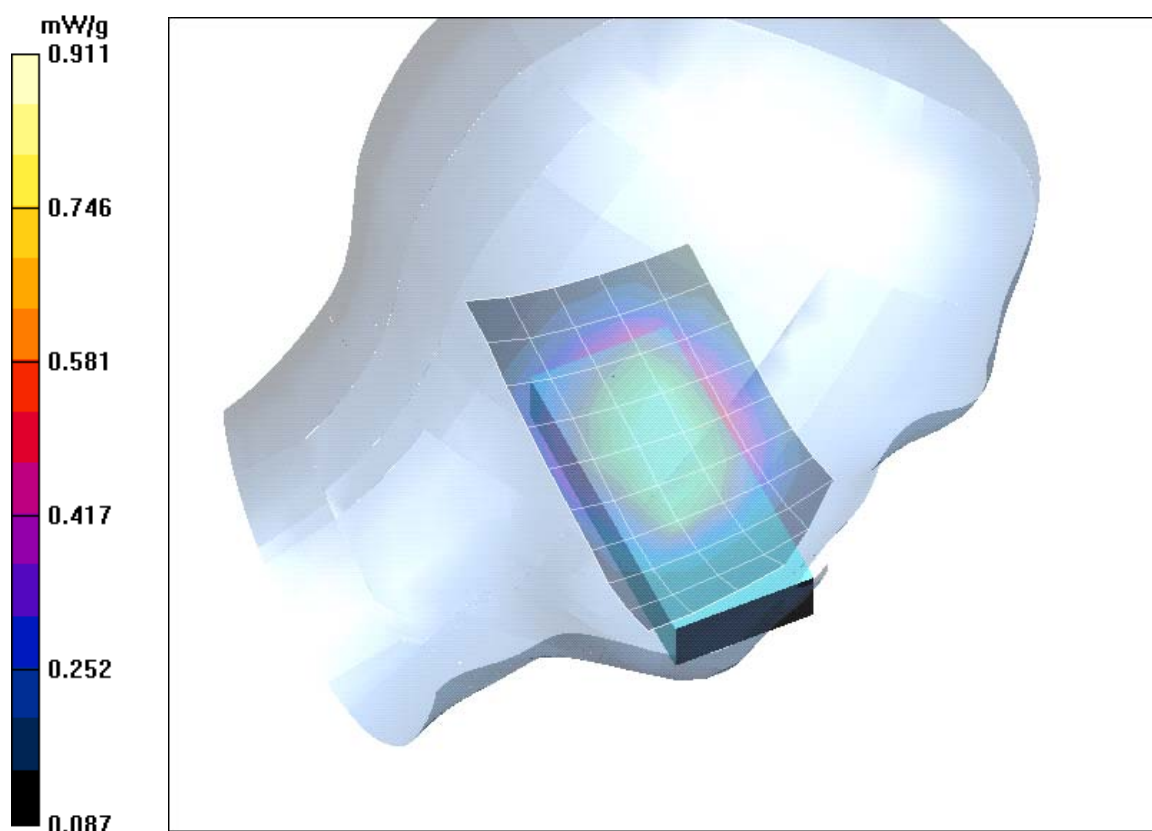


Fig. 1: SAR distribution for GSM 850, channel 190, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.6°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yalm 2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Left

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.650 mW/g

Tilted Left/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 27.3 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.854 W/kg

SAR(1 g) = 0.637 mW/g; SAR(10 g) = 0.446 mW/g

Maximum value of SAR (measured) = 0.679 mW/g

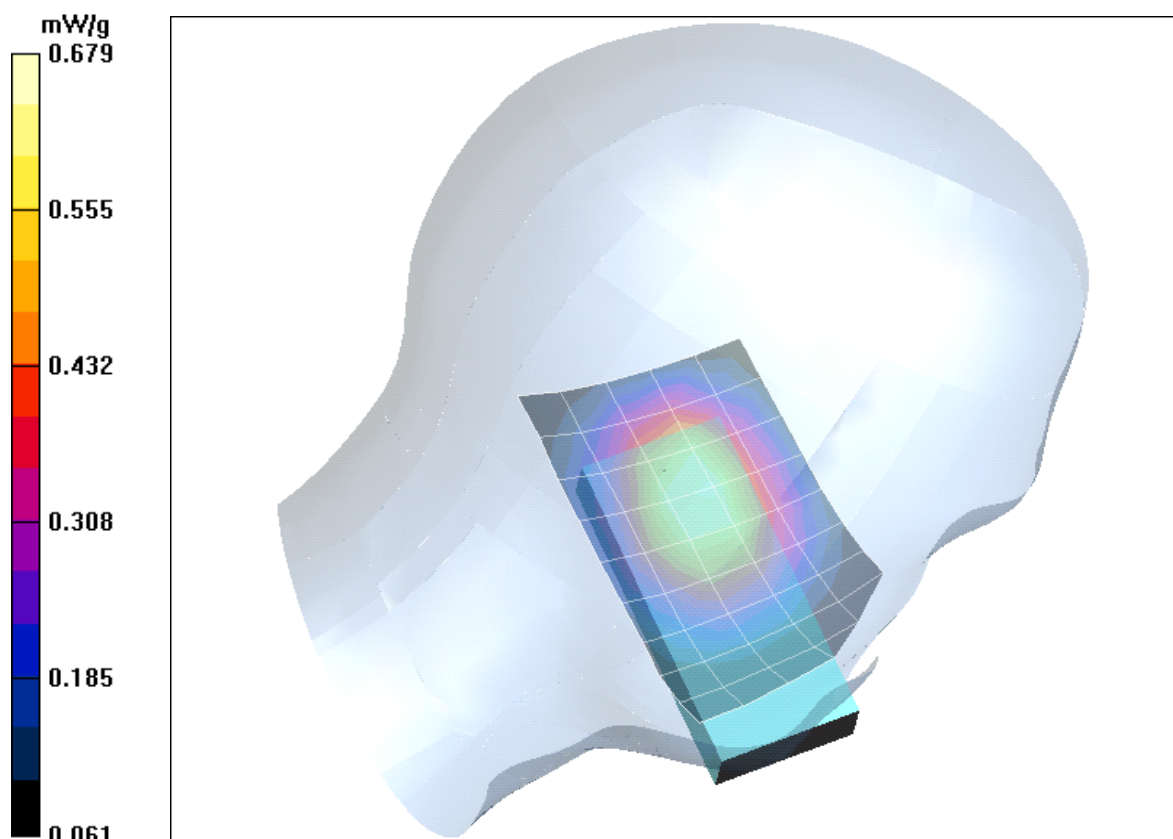


Fig. 2: SAR distribution for GSM 850, channel 190, tilted position, left side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.918 mW/g

Cheek Right/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.9 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.894 mW/g; SAR(10 g) = 0.646 mW/g

Maximum value of SAR (measured) = 0.961 mW/g

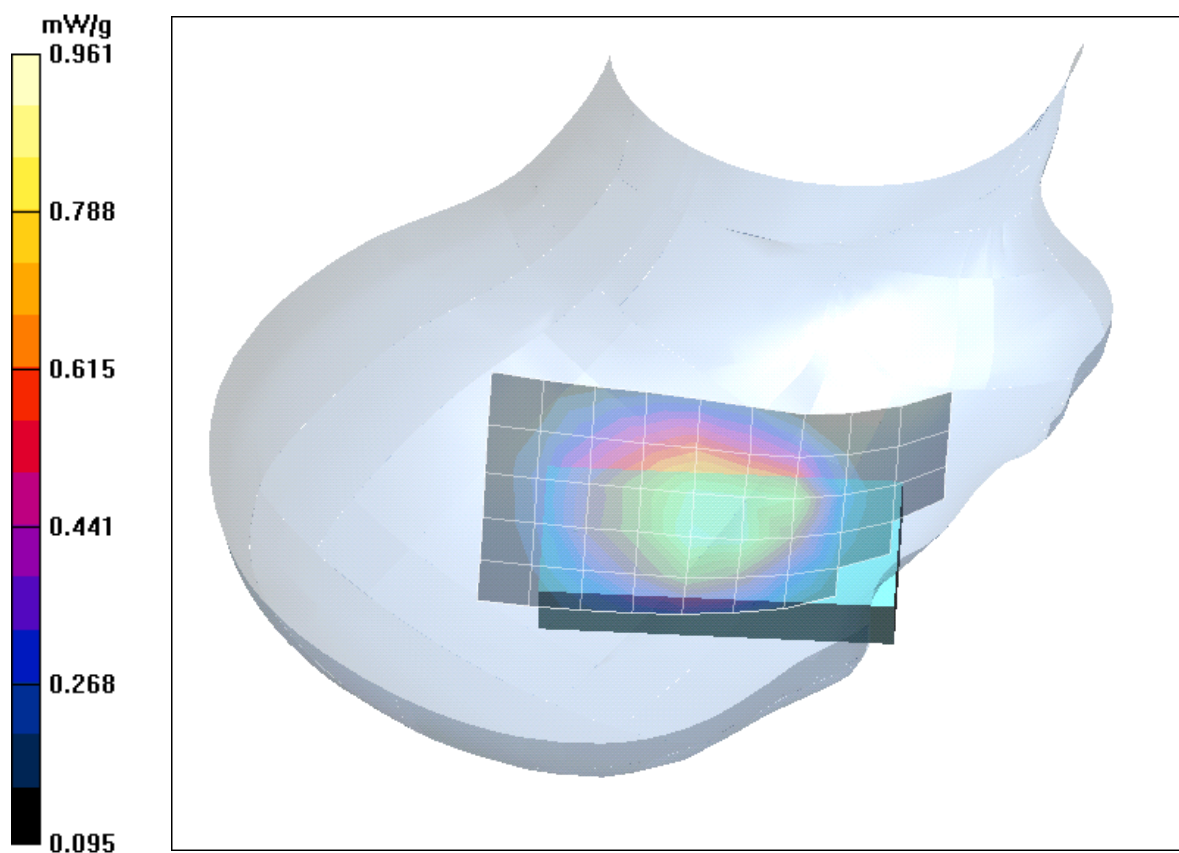


Fig. 3: SAR distribution for GSM 850, channel 190, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarm 2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Right

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.754 mW/g

Tilted Right/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 28.0 V/m; Power Drift = -0.093 dB

Peak SAR (extrapolated) = 0.982 W/kg

SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.523 mW/g

Maximum value of SAR (measured) = 0.787 mW/g

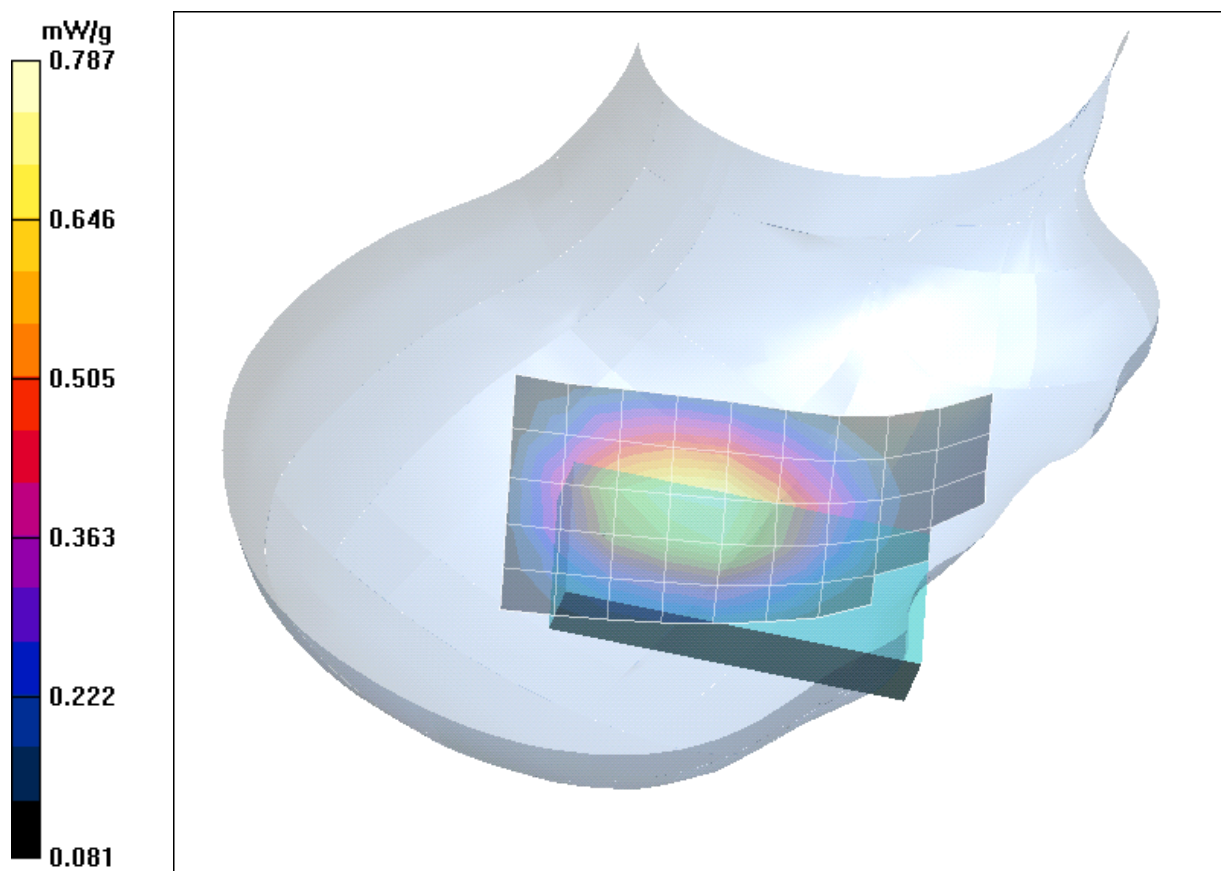


Fig. 4: SAR distribution for GSM 850, channel 190, tilted position, right side of head (January 30, 2006; Ambient Temperature: 21.8°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yall_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.784 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 24.3 V/m; Power Drift = 0.119 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.758 mW/g; SAR(10 g) = 0.544 mW/g

Maximum value of SAR (measured) = 0.831 mW/g

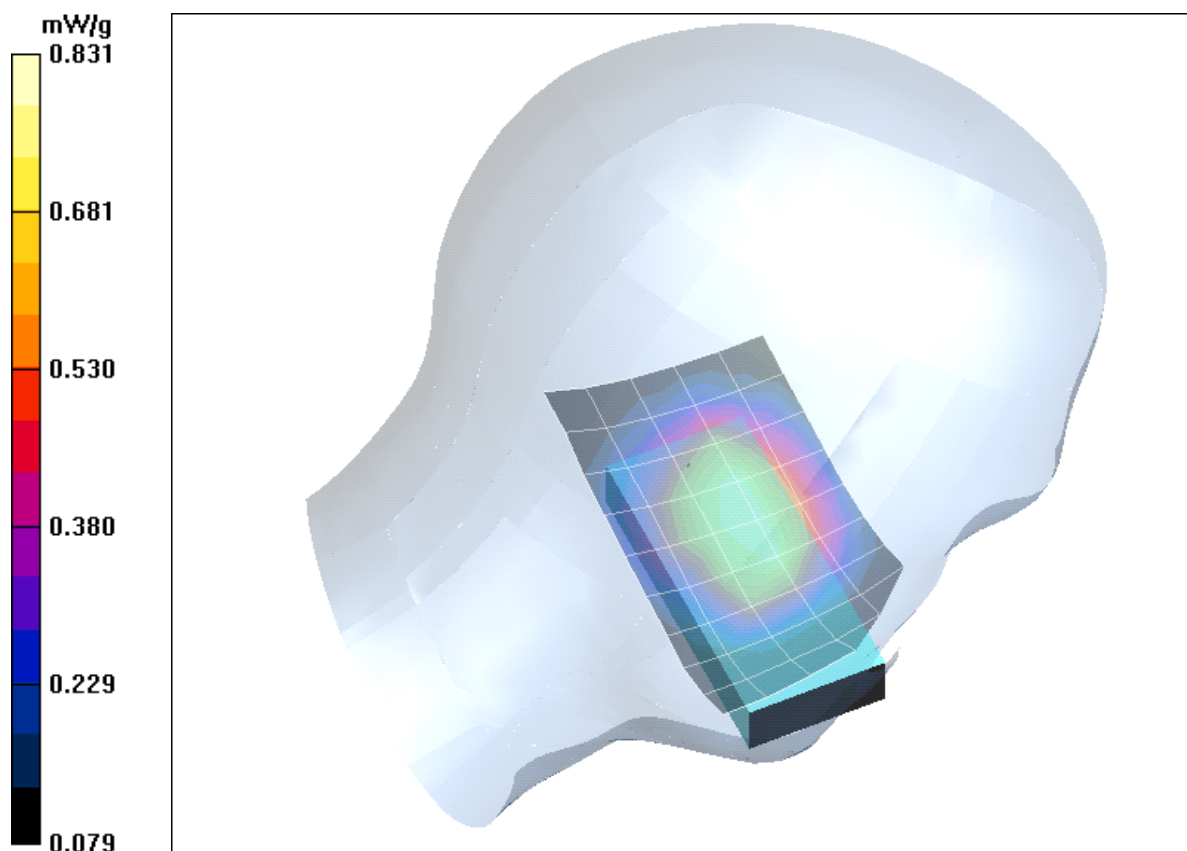


Fig. 5: SAR distribution for GSM 850, channel 128, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.6°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yalh_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.921 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.9 V/m; Power Drift = 0.070 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.909 mW/g; SAR(10 g) = 0.642 mW/g

Maximum value of SAR (measured) = 0.967 mW/g

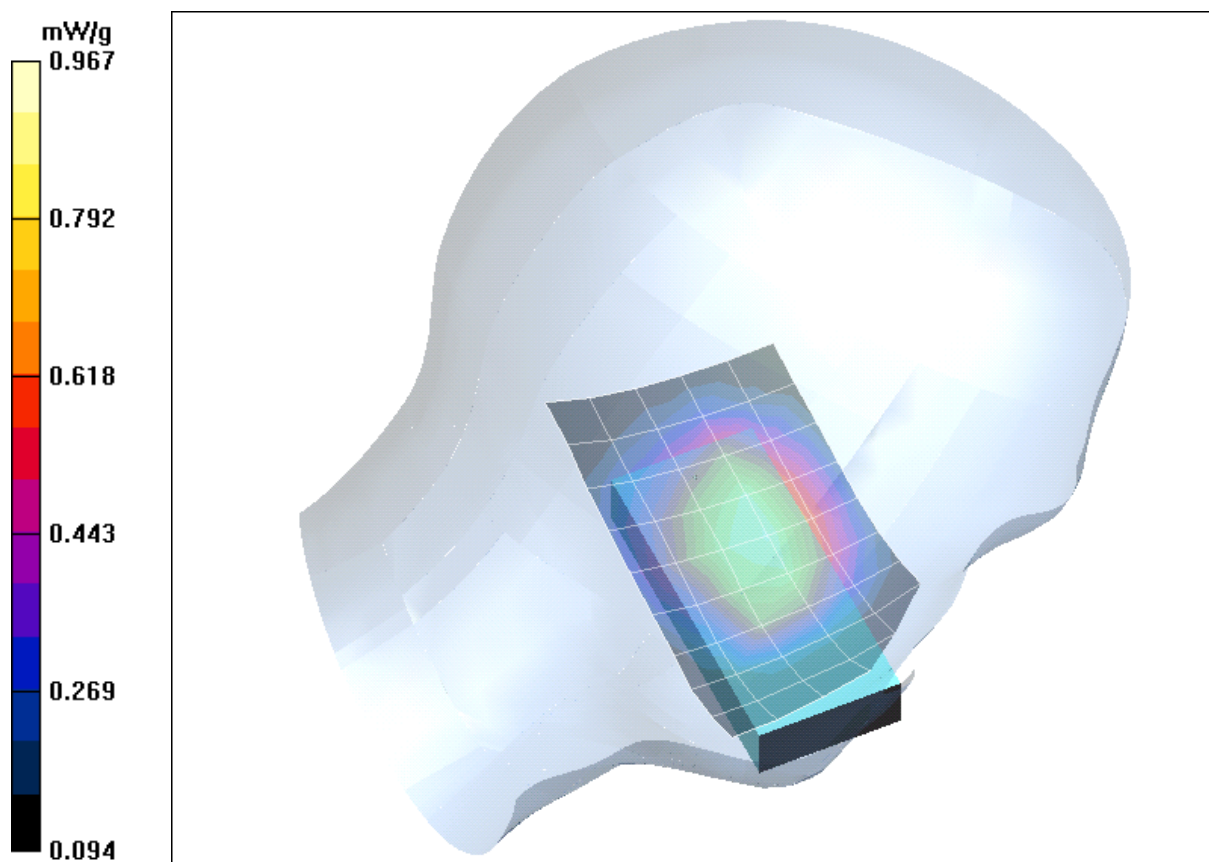


Fig. 6: SAR distribution for GSM 850, channel 251, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.6°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarl_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.817 mW/g

Cheek Right/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 23.4 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.785 mW/g; SAR(10 g) = 0.567 mW/g

Maximum value of SAR (measured) = 0.864 mW/g

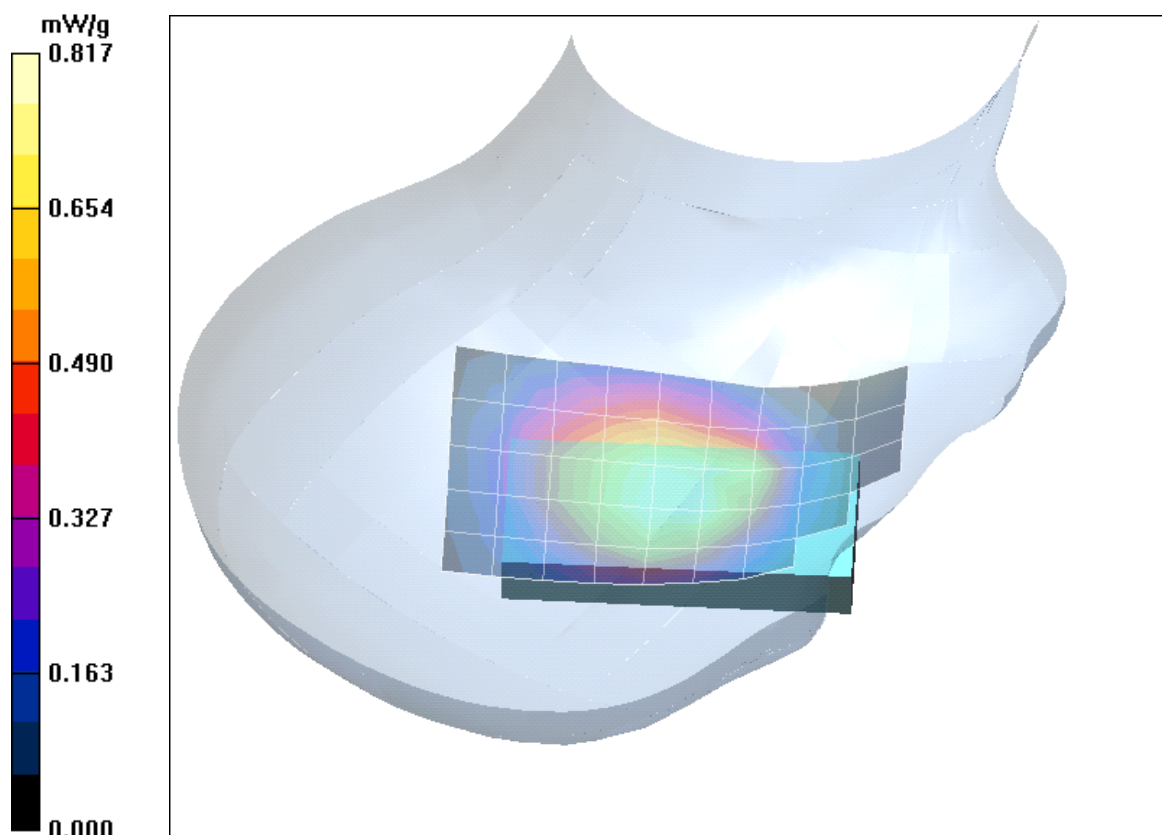


Fig. 7: SAR distribution for GSM 850, channel 128, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarh_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.987 mW/g

Cheek Right/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 25.3 V/m; Power Drift = -0.054 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.950 mW/g; SAR(10 g) = 0.681 mW/g

Maximum value of SAR (measured) = 1.01 mW/g

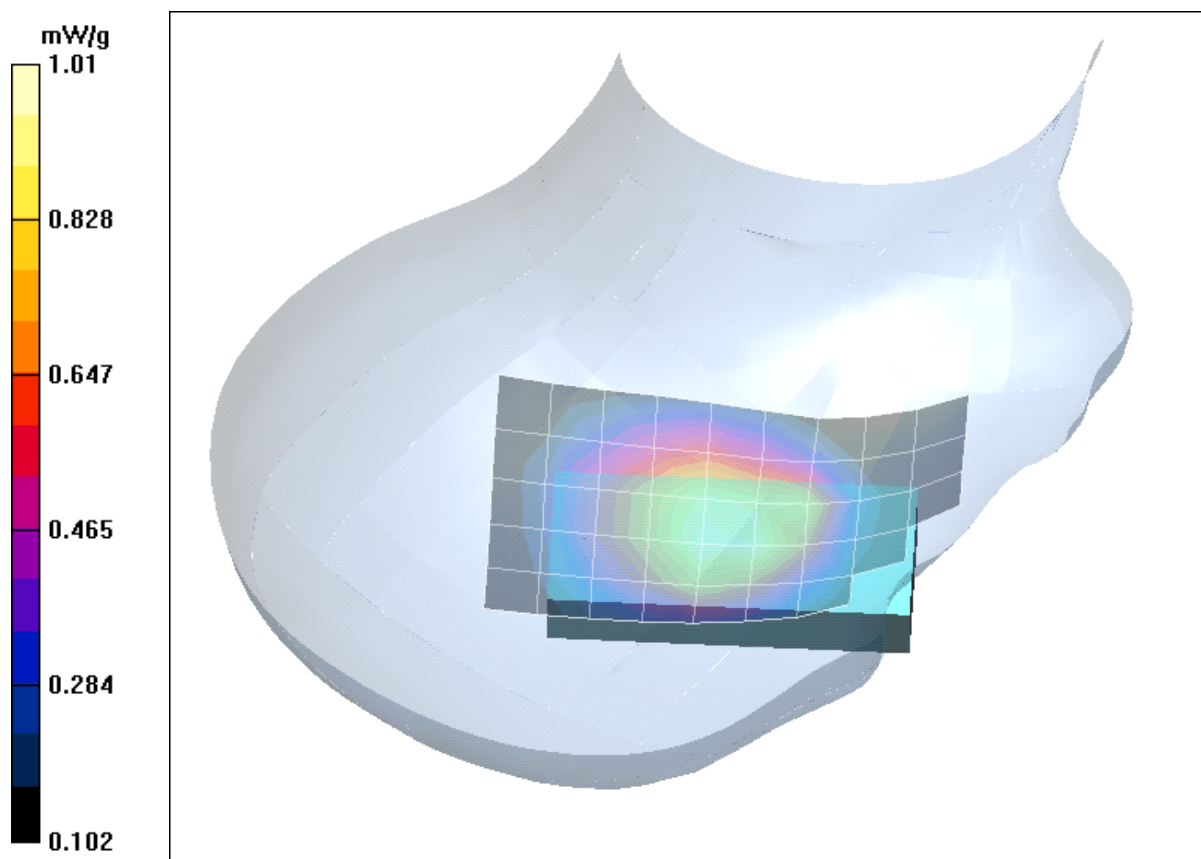


Fig. 8: SAR distribution for GSM 850, channel 251, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

2 SAR Distribution Plots, PCS 1900 Head

Test Laboratory: Imst GmbH; File Name: [991yplm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.477 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 0.704 W/kg

SAR(1 g) = 0.440 mW/g; SAR(10 g) = 0.248 mW/g

Maximum value of SAR (measured) = 0.494 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 0.426 W/kg

SAR(1 g) = 0.292 mW/g; SAR(10 g) = 0.182 mW/g

Maximum value of SAR (measured) = 0.322 mW/g

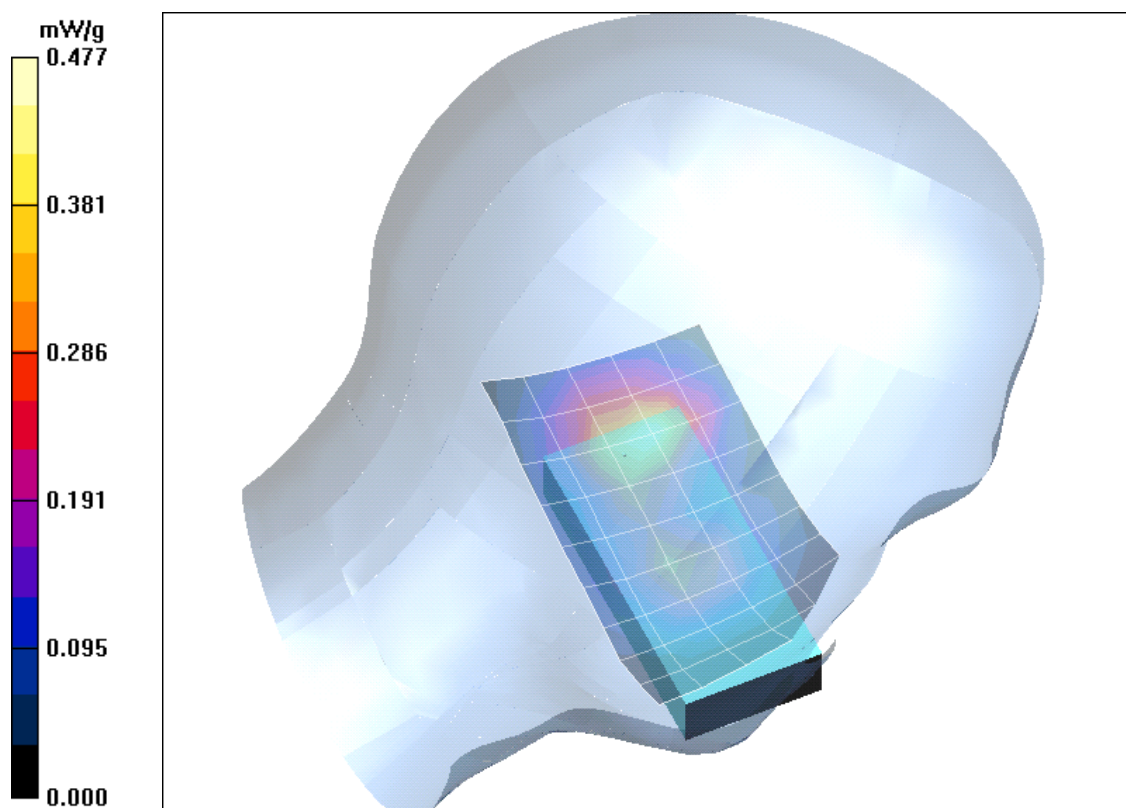


Fig. 9: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yplm_2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Left

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.445 mW/g

Tilted Left/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.8 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 0.712 W/kg

SAR(1 g) = 0.412 mW/g; SAR(10 g) = 0.230 mW/g

Maximum value of SAR (measured) = 0.449 mW/g

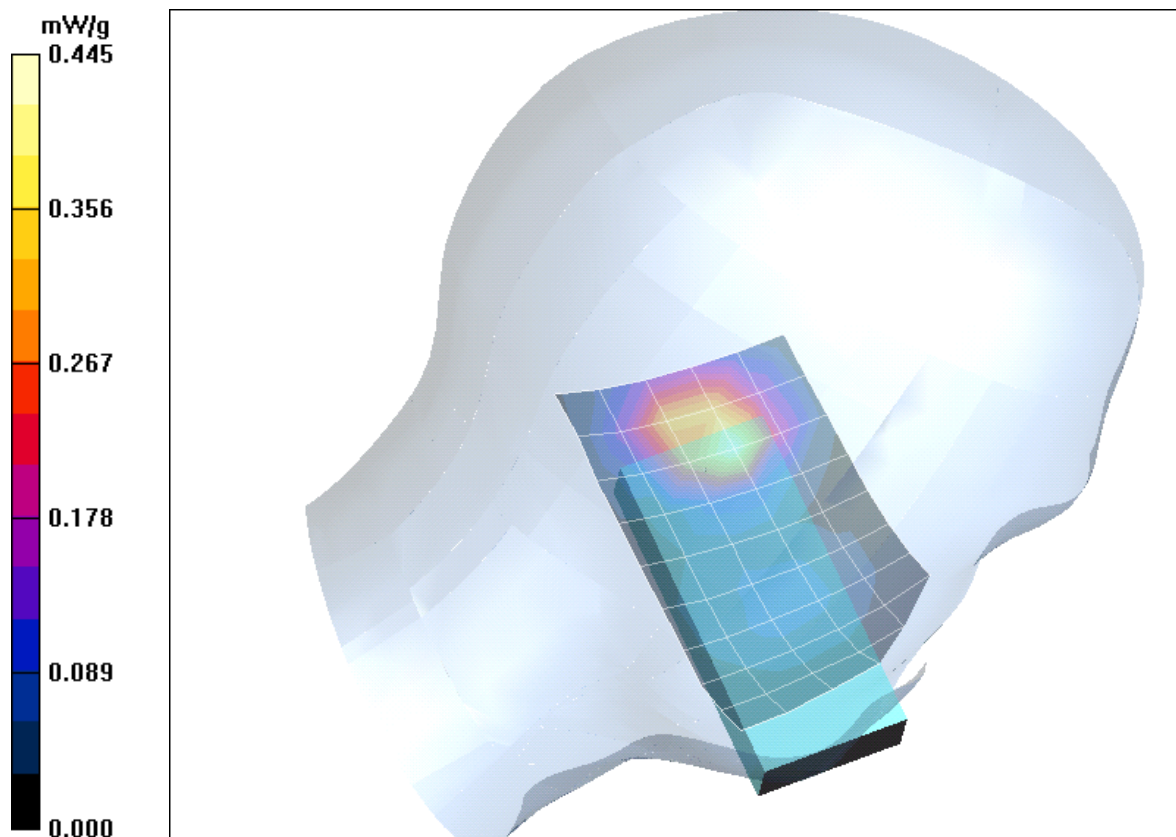


Fig. 10: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yprm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991
Program Name: Cheek Right

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³
Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.434 mW/g

Cheek Right/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 17.7 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 0.719 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.248 mW/g

Maximum value of SAR (measured) = 0.456 mW/g

Cheek Right/Zoom Scan (7x7x7)/Cube 1: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 17.7 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 0.418 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.171 mW/g

Maximum value of SAR (measured) = 0.321 mW/g

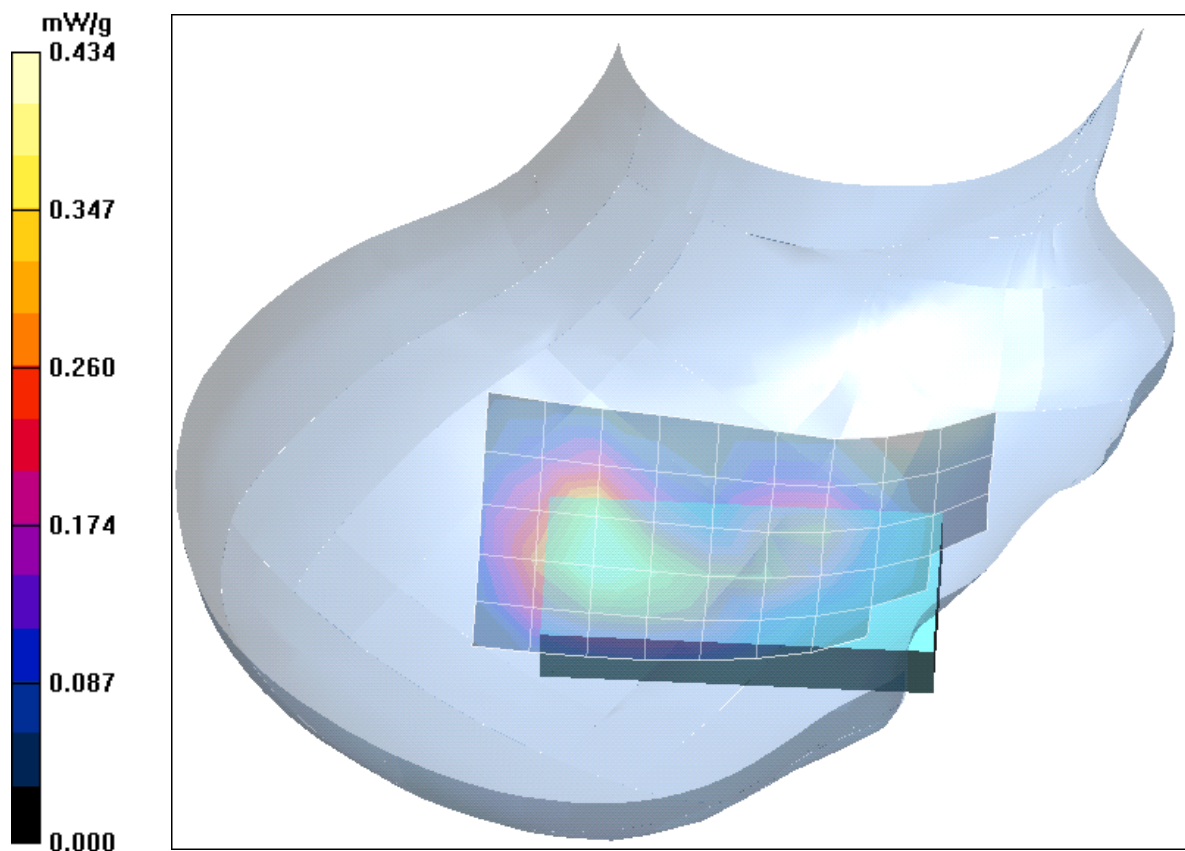


Fig. 11: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yprm 2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Right

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.361 mW/g

Tilted Right/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.5 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 0.651 W/kg

SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.212 mW/g

Maximum value of SAR (measured) = 0.412 mW/g

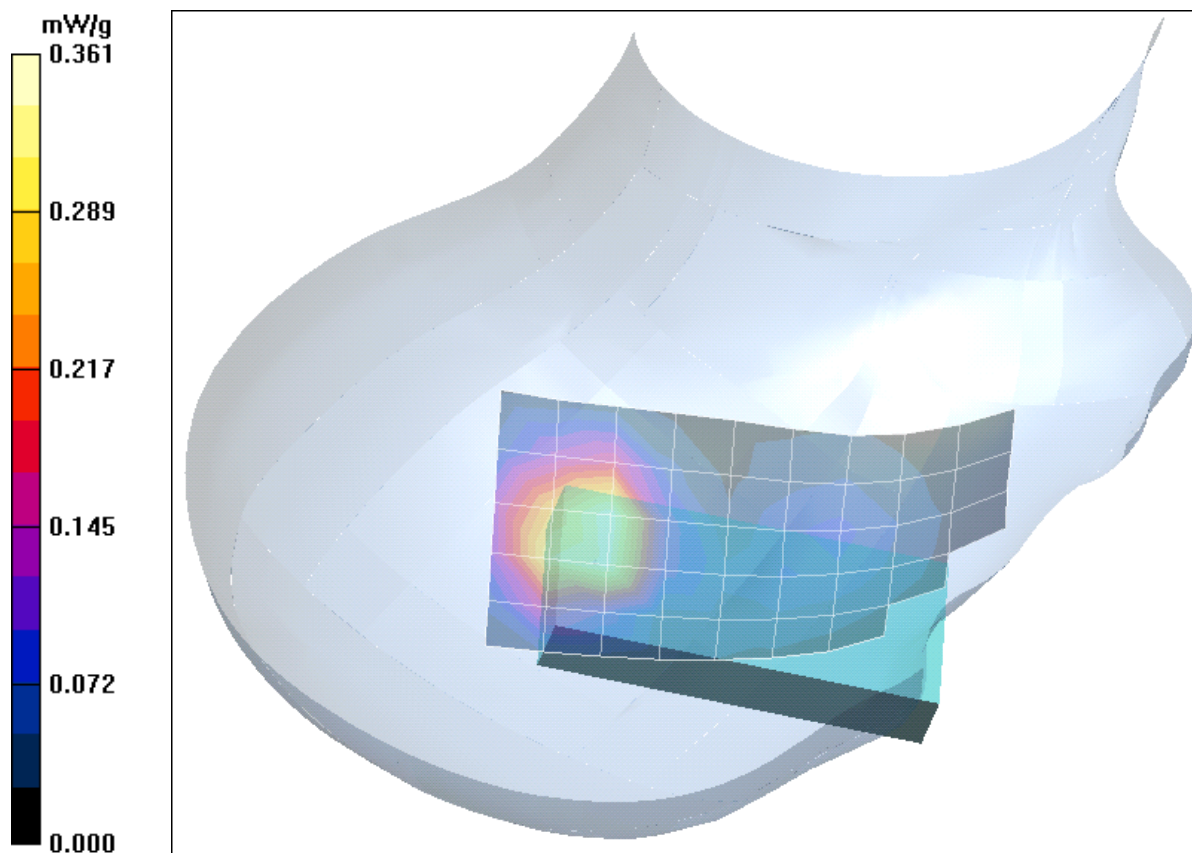


Fig. 12: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (January 30, 2006; Ambient Temperature: 21.7 °C; Liquid Temperature: 21.0°C)

3 SAR Distribution Plots, GSM 850 Body GSM mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bahl 4 7mm ohne.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 824.2$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.13 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.9 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.727 mW/g

Maximum value of SAR (measured) = 1.15 mW/g

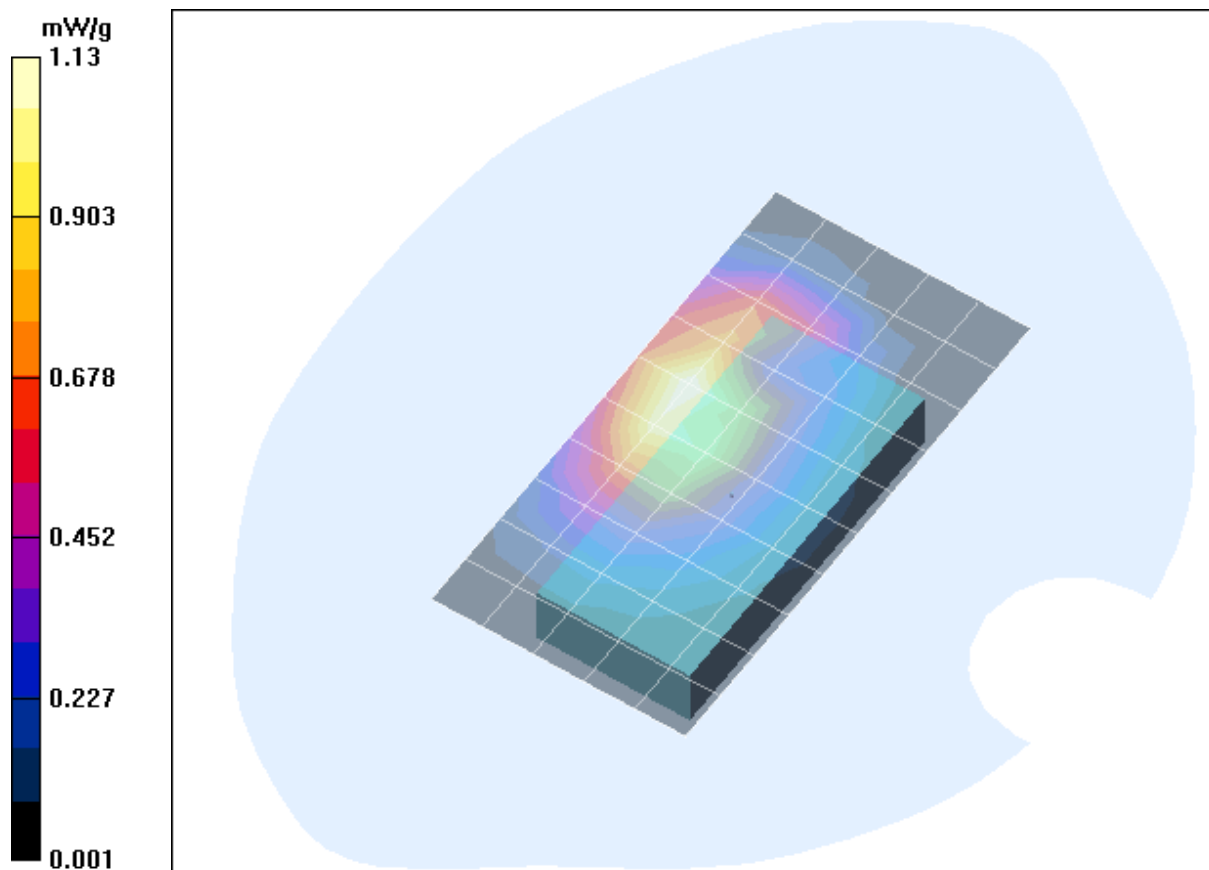


Fig. 13: SAR distribution for GSM 850, channel 128, body worn configuration, antenna towards the phantom, without accessory, with 7 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bahl_5_7mm_headset.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991
Program Name: Body Worn

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 824.2$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 1.01 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.0 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.967 mW/g; SAR(10 g) = 0.652 mW/g

Maximum value of SAR (measured) = 1.04 mW/g

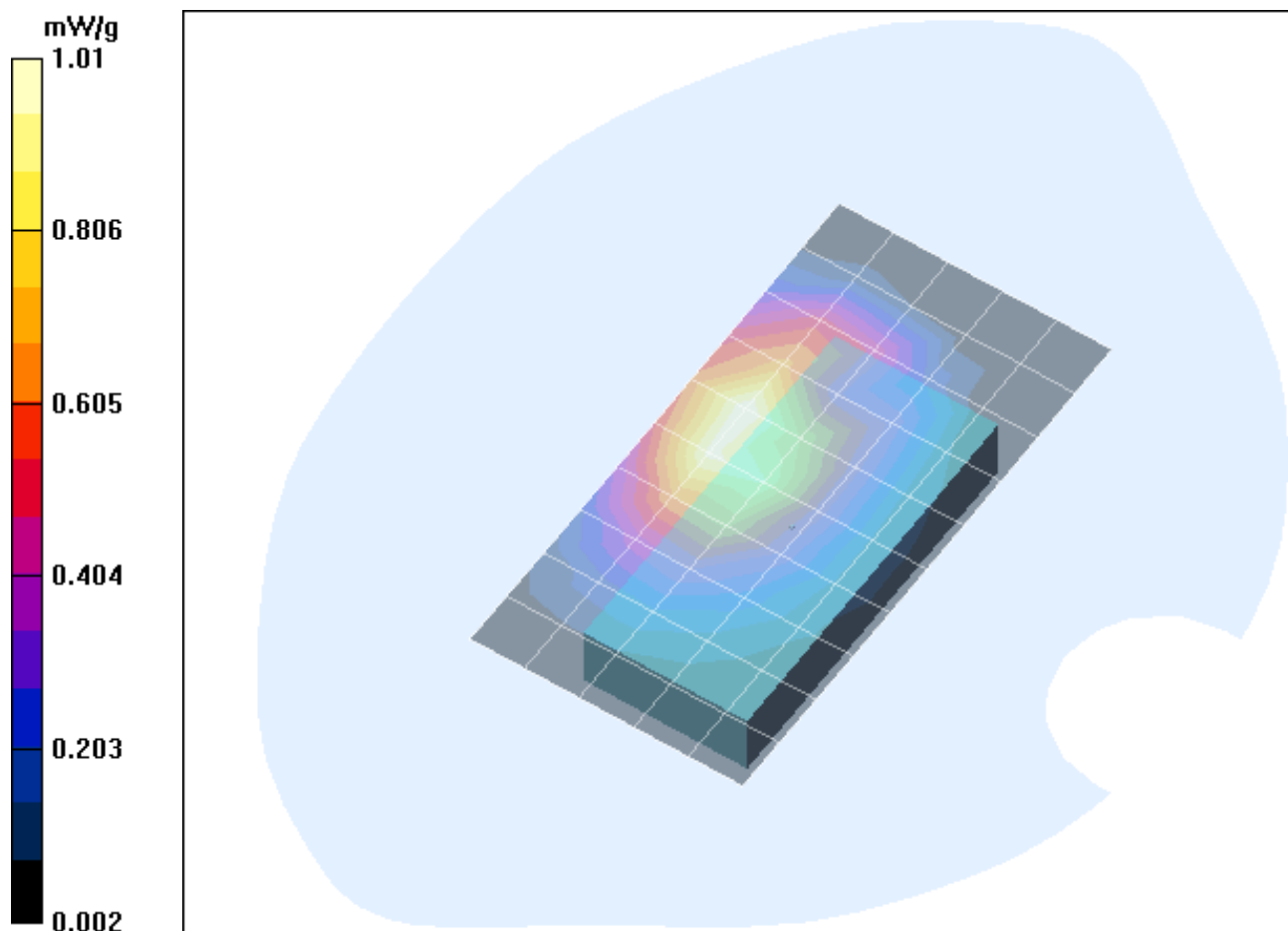


Fig. 14: SAR distribution for GSM 850, channel 128, body worn configuration, antenna towards the phantom, with headset, with 7 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

4 SAR Distribution Plots, GSM 850 Body in GPRS mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 991bahm_6_7mm_data.da4

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 07.07.2005

- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.640 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 19.7 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.597 mW/g; SAR(10 g) = 0.397 mW/g

Maximum value of SAR (measured) = 0.645 mW/g

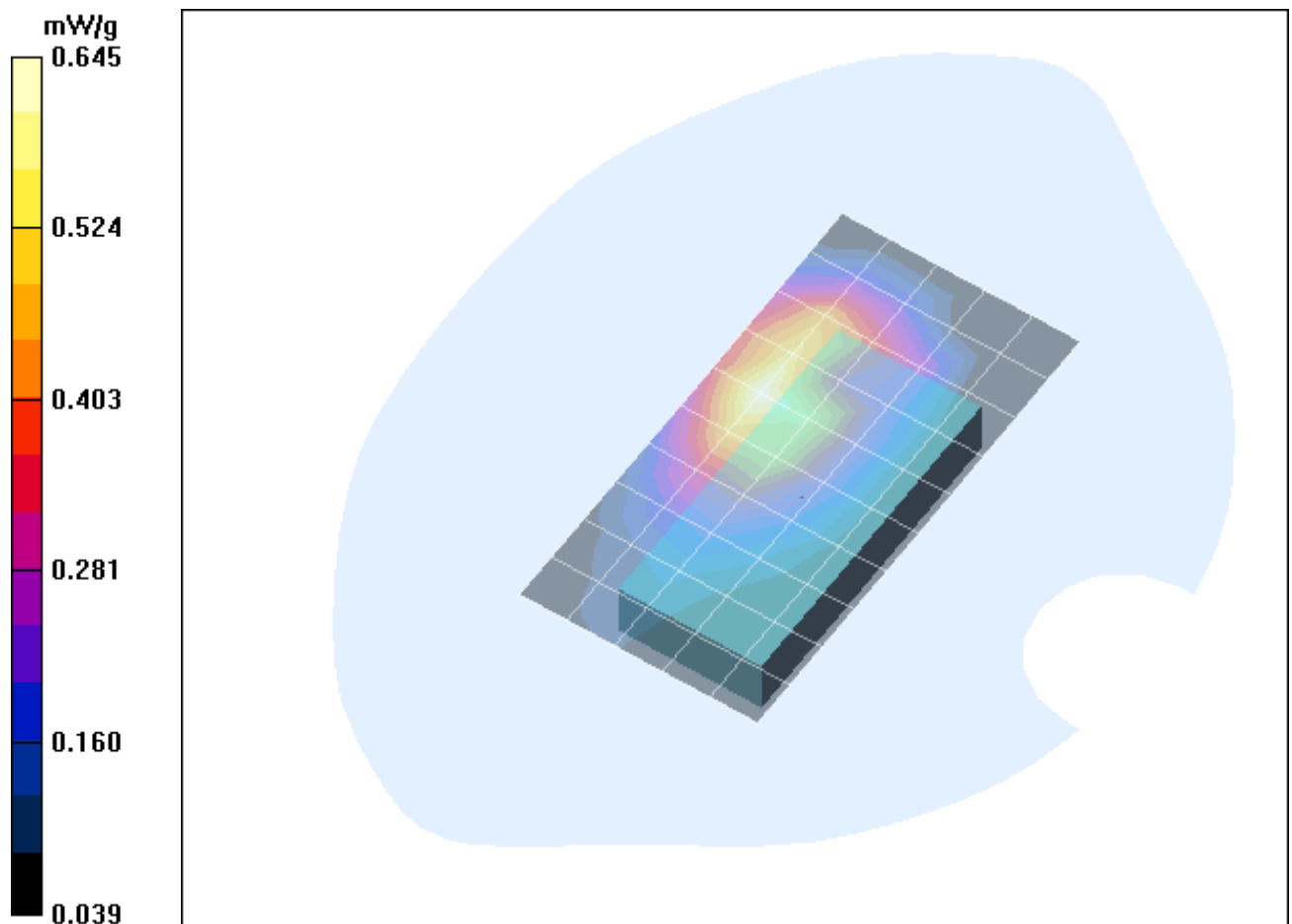


Fig. 15: SAR distribution for GPRS 850, channel 190, body worn configuration, antenna towards the phantom, with data cable, with 7 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bahm 7 25mm PTT.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991
Program Name: Body Worn

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.376 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.3 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.482 W/kg

SAR(1 g) = 0.361 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.383 mW/g

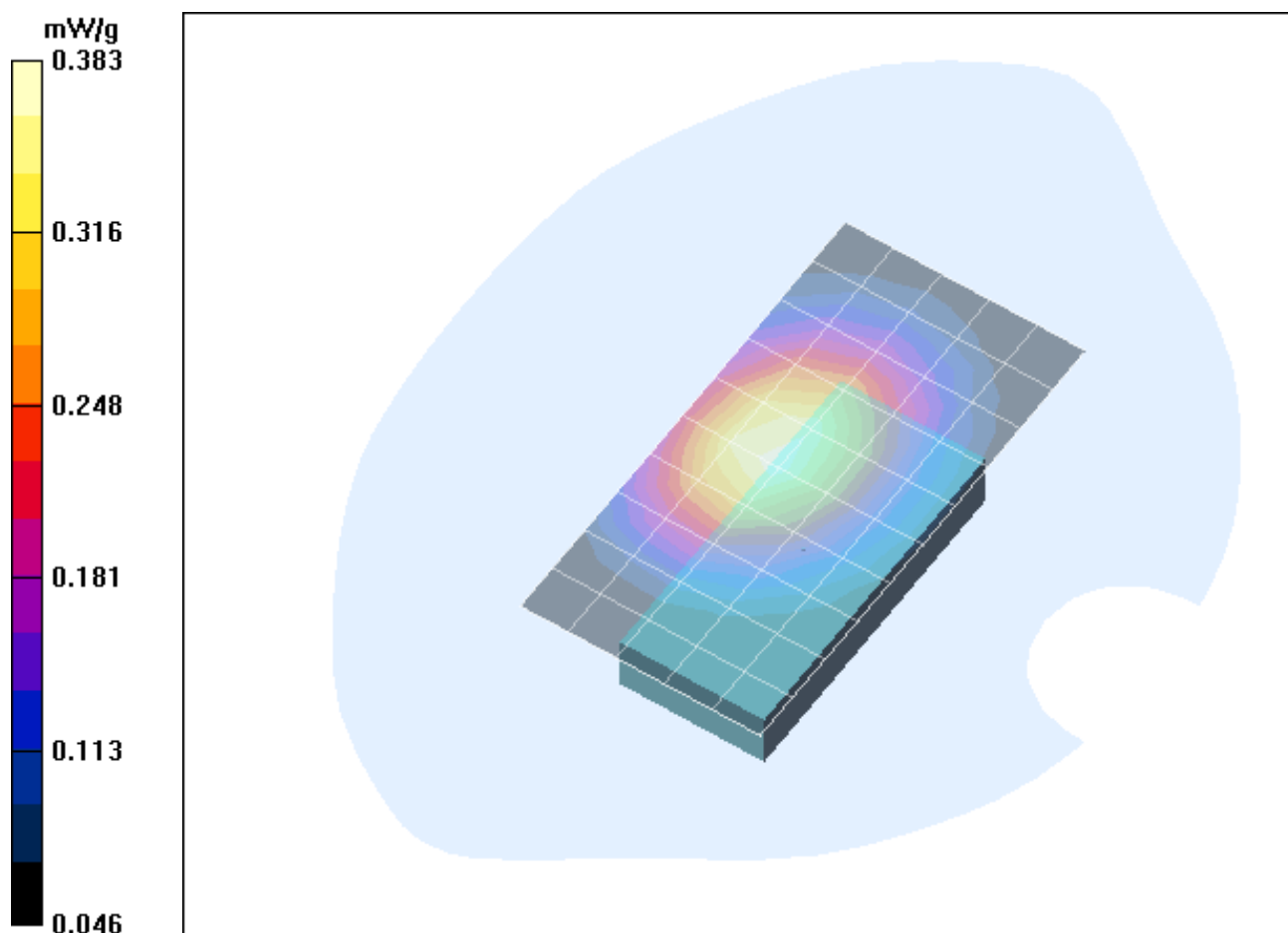


Fig. 16: SAR distribution for GPRS 850, channel 190, body worn configuration, display towards the phantom, PoC configuration, with 25 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

5 SAR Distribution Plots, GSM 1900 Body GSM mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bphm_4_7mm_ohne.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 07.07.2005

- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.736 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.3 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.707 mW/g; SAR(10 g) = 0.436 mW/g

Maximum value of SAR (measured) = 0.763 mW/g

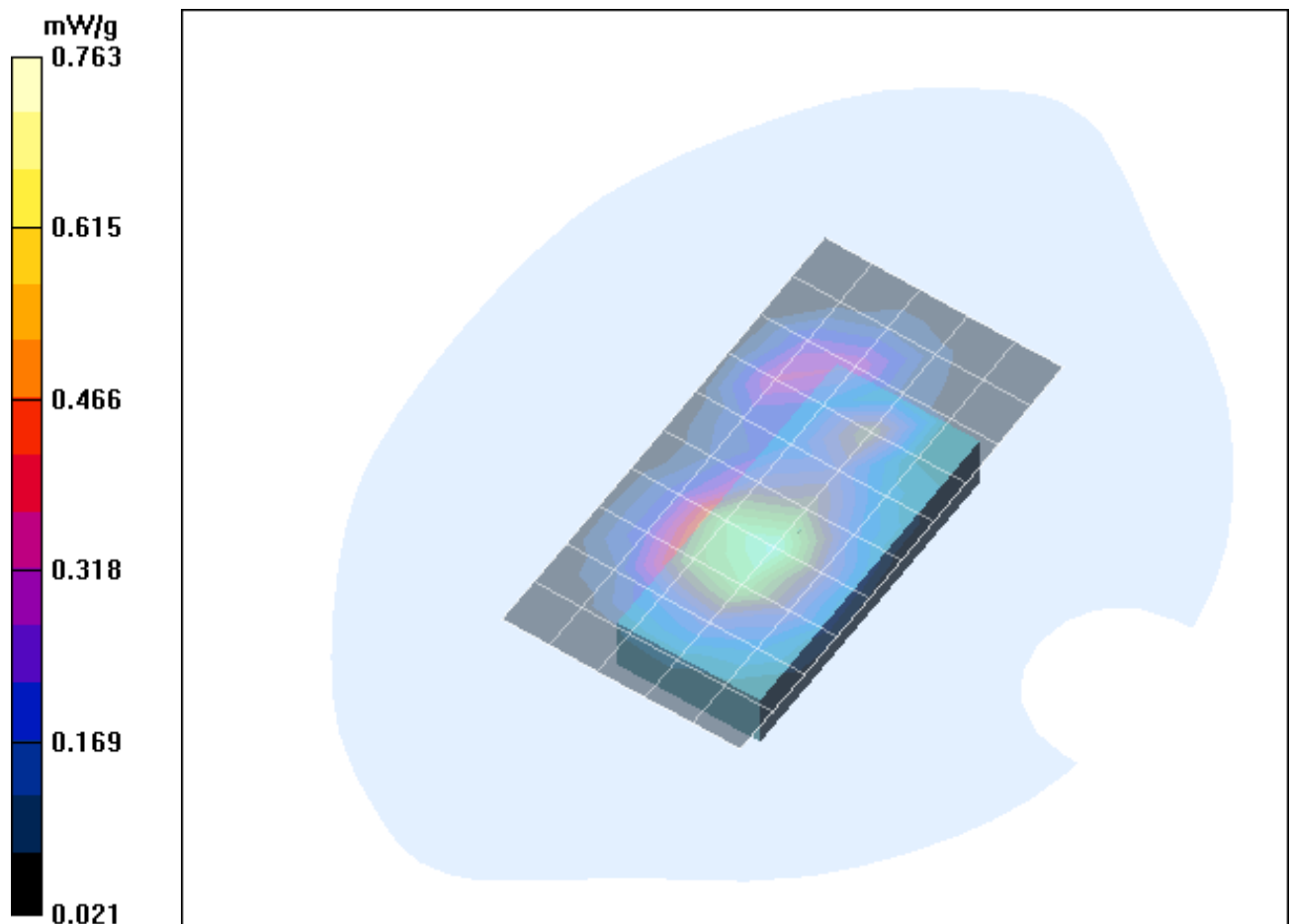


Fig. 17: SAR distribution for GSM 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1°C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [991bphm 5 7mm headset.da4](#)

DUT: BenQ A31a (Body Config); **Type:** BenQ A31a; **Serial:** 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.800 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.3 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.479 mW/g

Maximum value of SAR (measured) = 0.839 mW/g

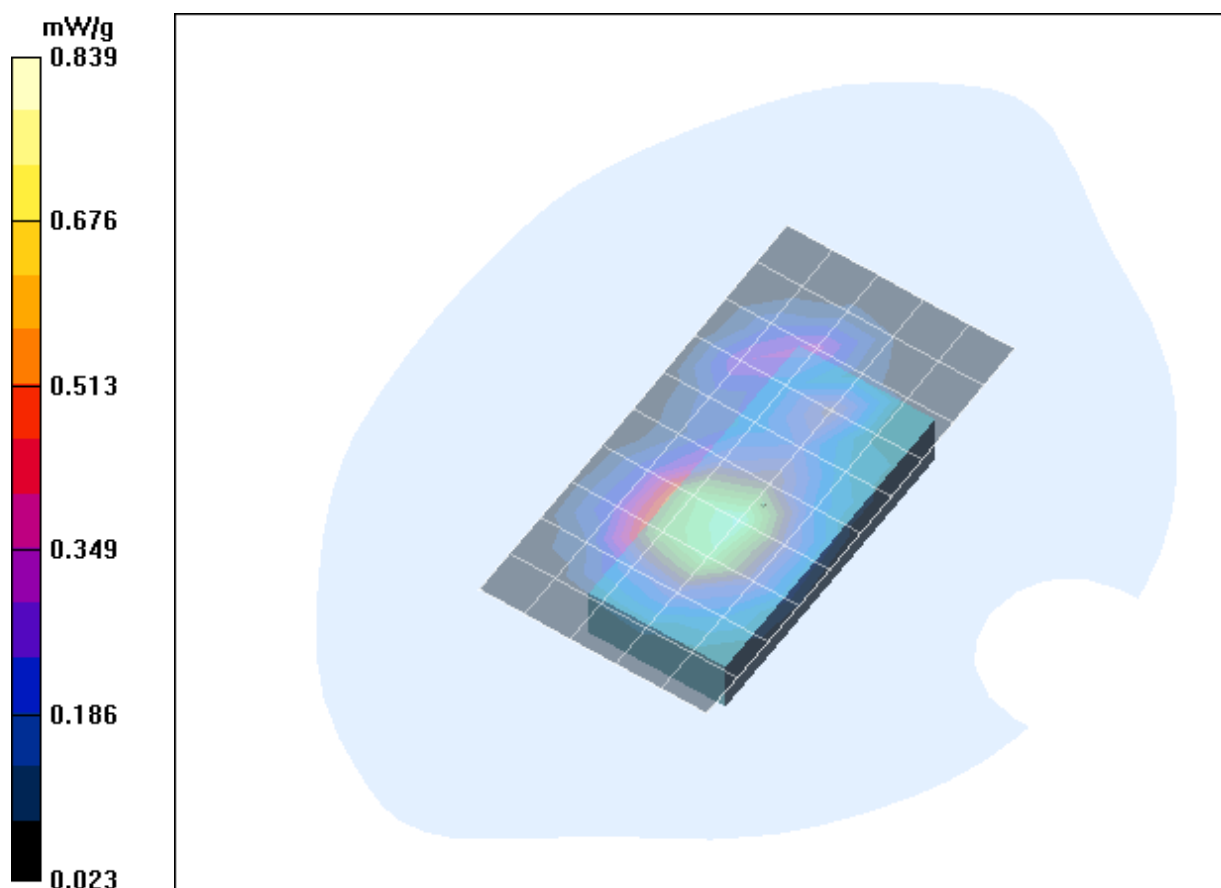


Fig. 18: SAR distribution for GSM 1900, channel 661, body worn configuration, antenna towards the phantom, with headset, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

6 SAR Distribution Plots, GSM 1900 Body in GPRS mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 991bphm_6_7mm_data.da4

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 07.07.2005

- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.535 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.2 V/m; Power Drift = -0.086 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.273 mW/g

Maximum value of SAR (measured) = 0.634 mW/g

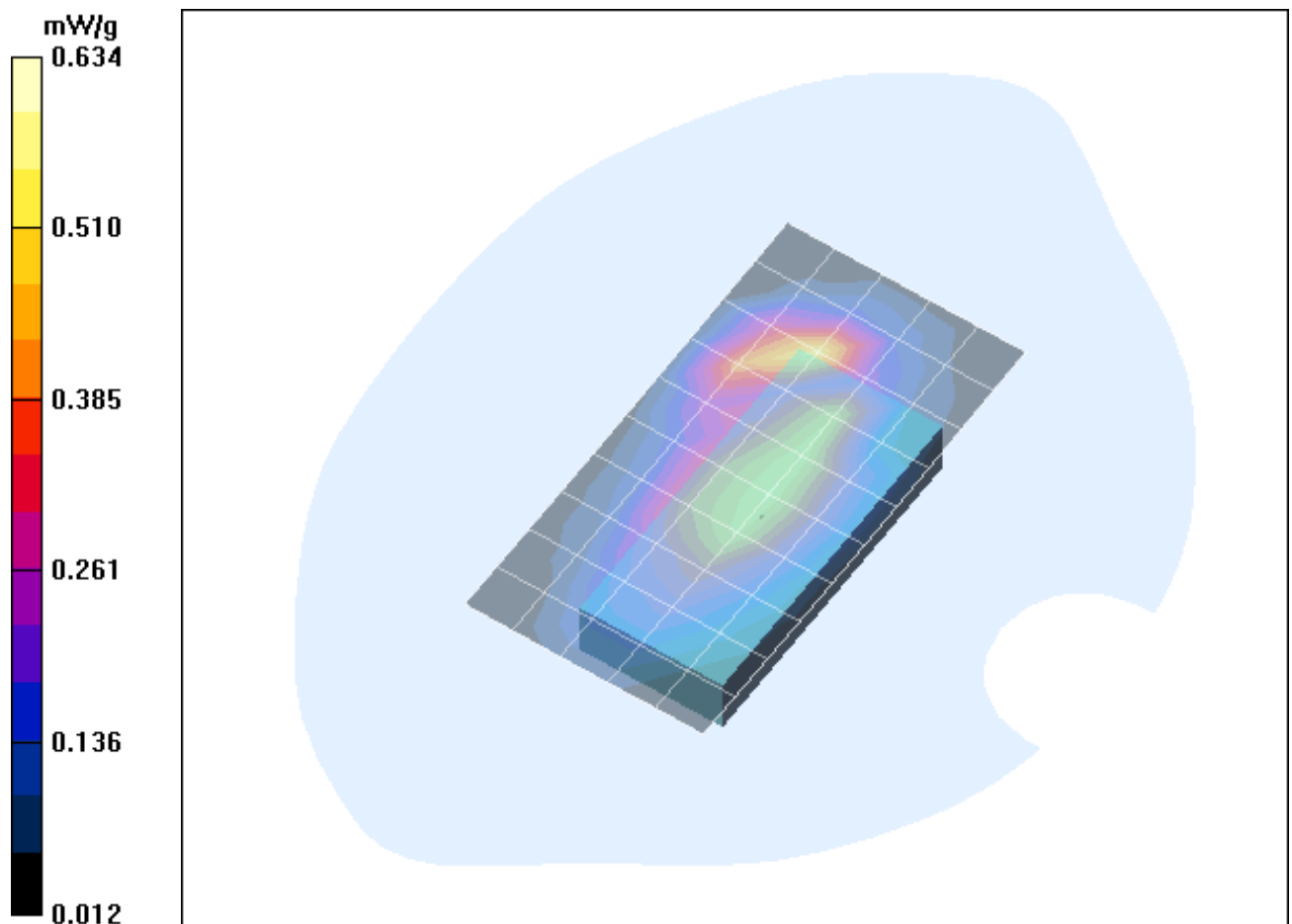


Fig. 19: SAR distribution for GPRS 1900, channel 661, body worn configuration, antenna towards the phantom, with data cable, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [991bphm 7 25mm PTT.da4](#)

DUT: BenQ A31a (Body Config); **Type:** BenQ A31a; **Serial:** 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.077 mW/g

Body Worn/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.37 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 0.117 W/kg

SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.082 mW/g

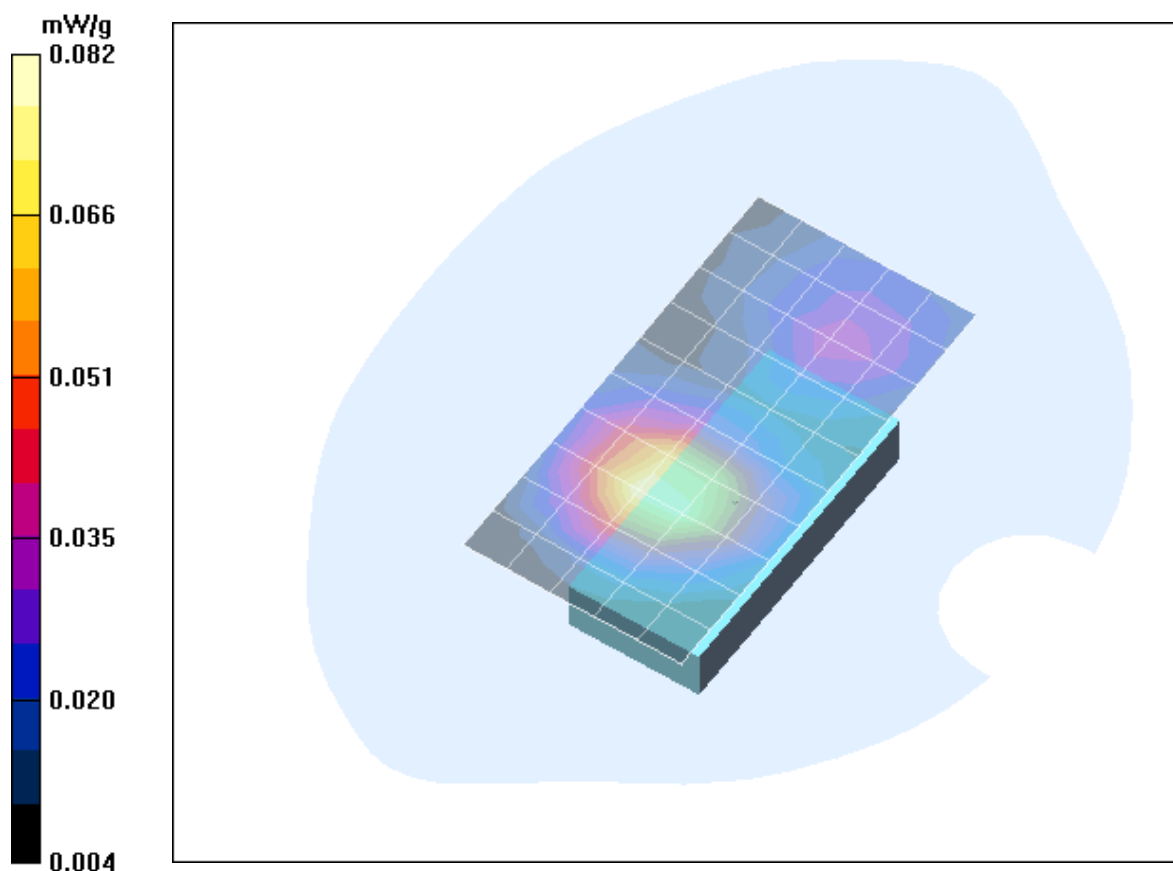


Fig. 20: SAR distribution for GPRS 1900, channel 661, body worn configuration, display towards the phantom, PoC configuration, with 25 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

7 SAR z-axis scans (Validation)

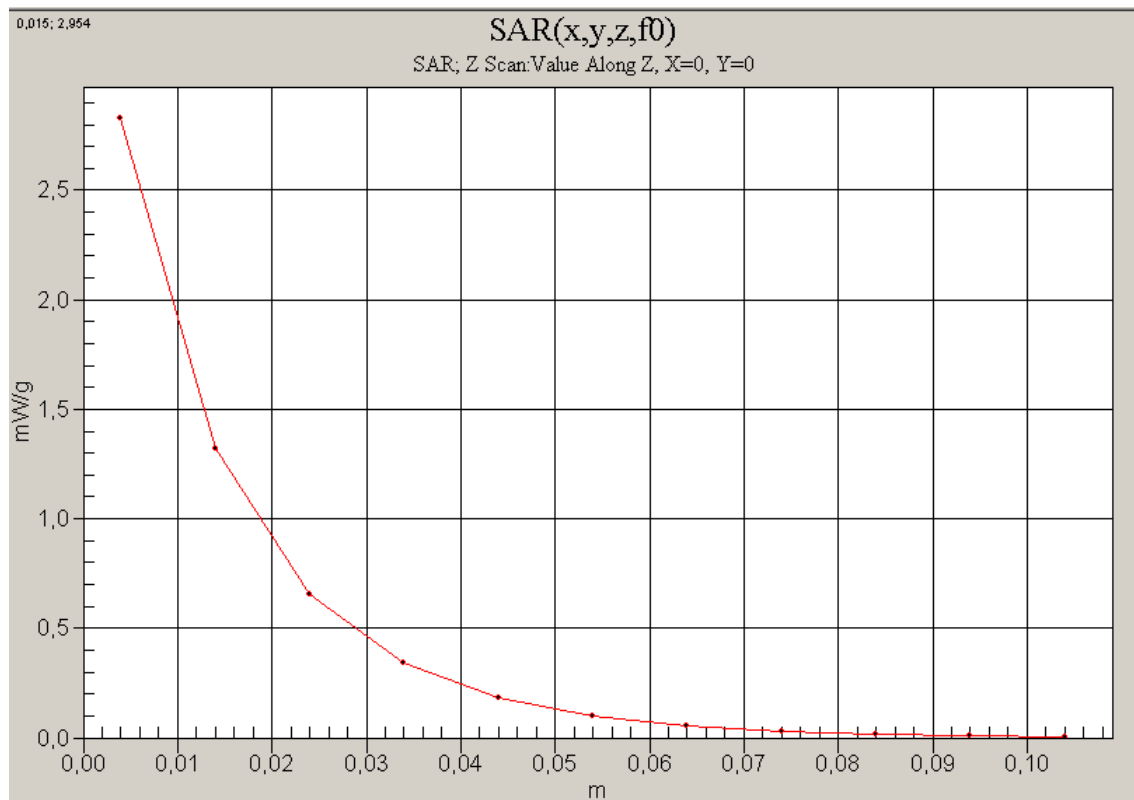


Fig. 21: SAR versus liquid depth, 835 MHz, head (January 30, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

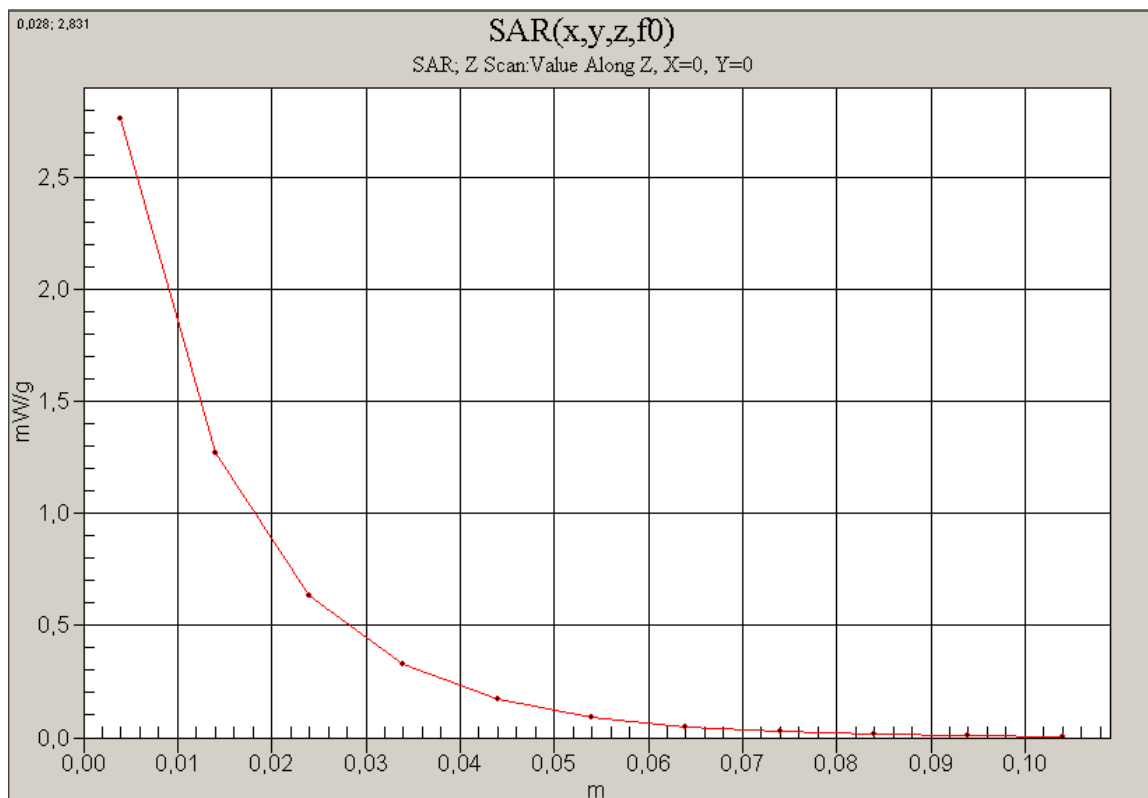


Fig. 22: SAR versus liquid depth, 835 MHz, body (January 31, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

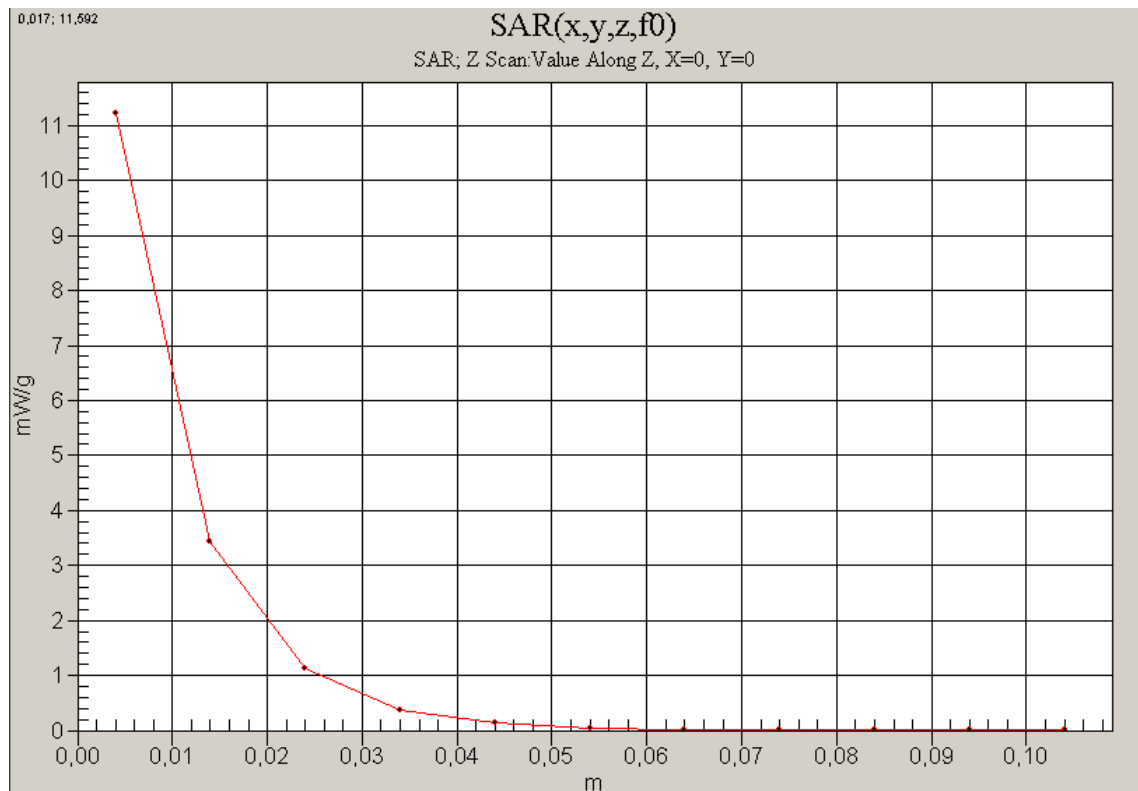


Fig. 23: SAR versus liquid depth, 1900 MHz, head (January 30, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

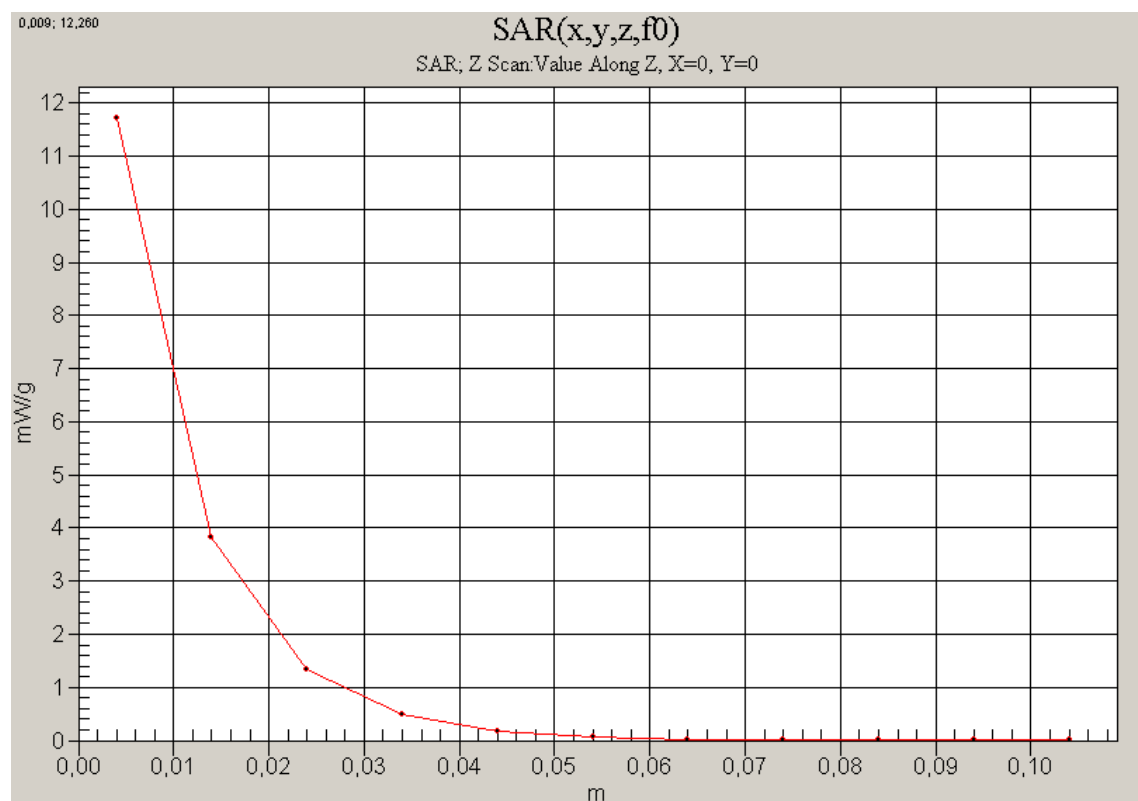


Fig. 24: SAR versus liquid depth, 1900 MHz, body (February 01, 2006; Ambient Temperature: 21.4° C; Liquid Temperature : 20.9° C).

8 SAR z-axis scans (Measurements)

The following pictures show the plots of SAR versus liquid depth for the worst case values.

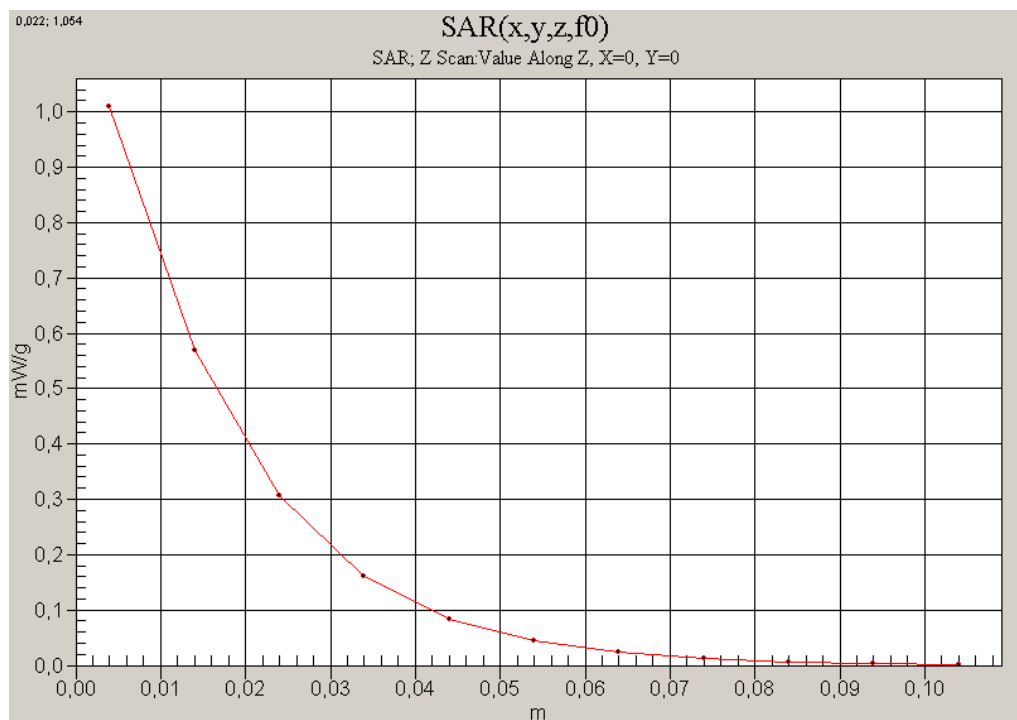


Fig. 25: SAR versus liquid depth, head: GSM 850, channel 251, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

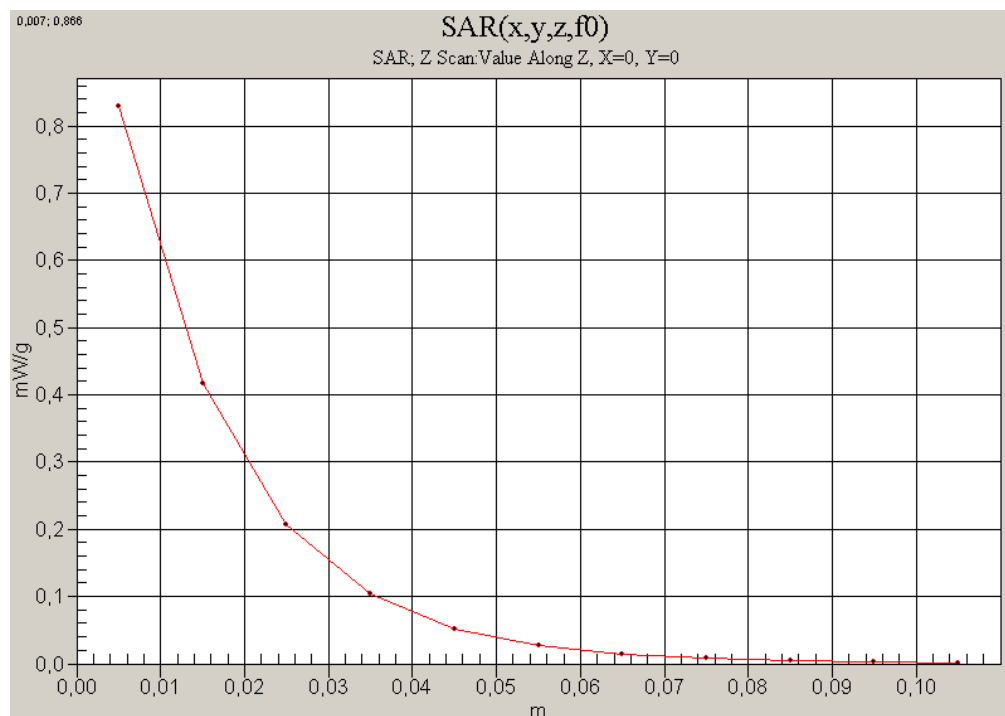


Fig. 26: SAR versus liquid depth, body: GSM 850, channel 128, without accessory, with 7mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature : 21.1° C).

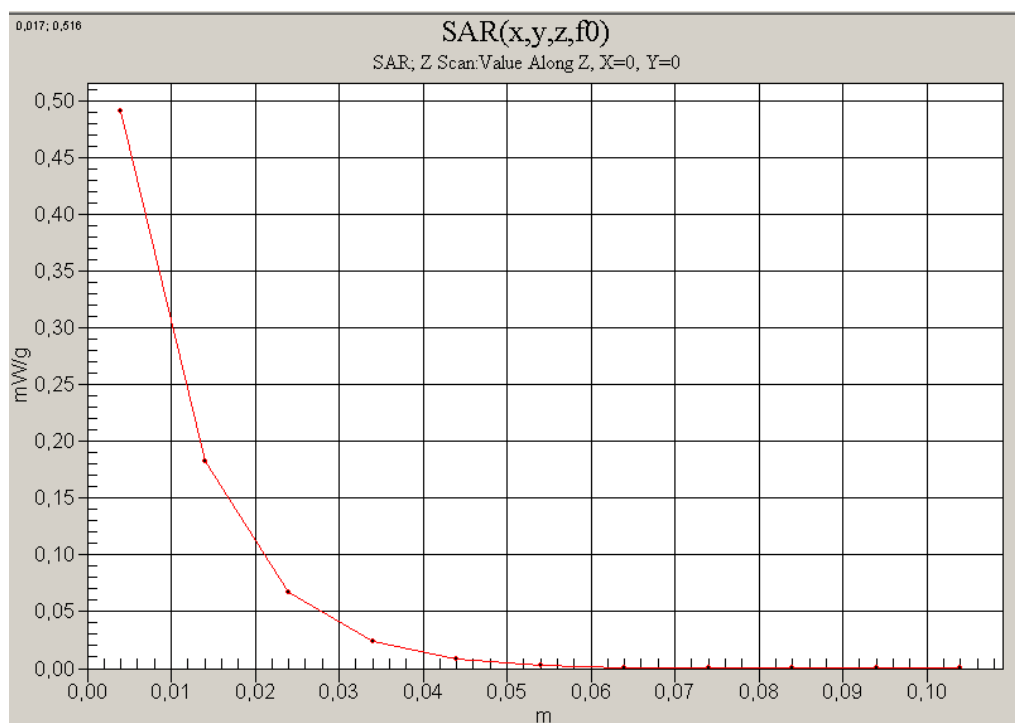


Fig. 27: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.7° C; Liquid Temperature : 21.0° C).

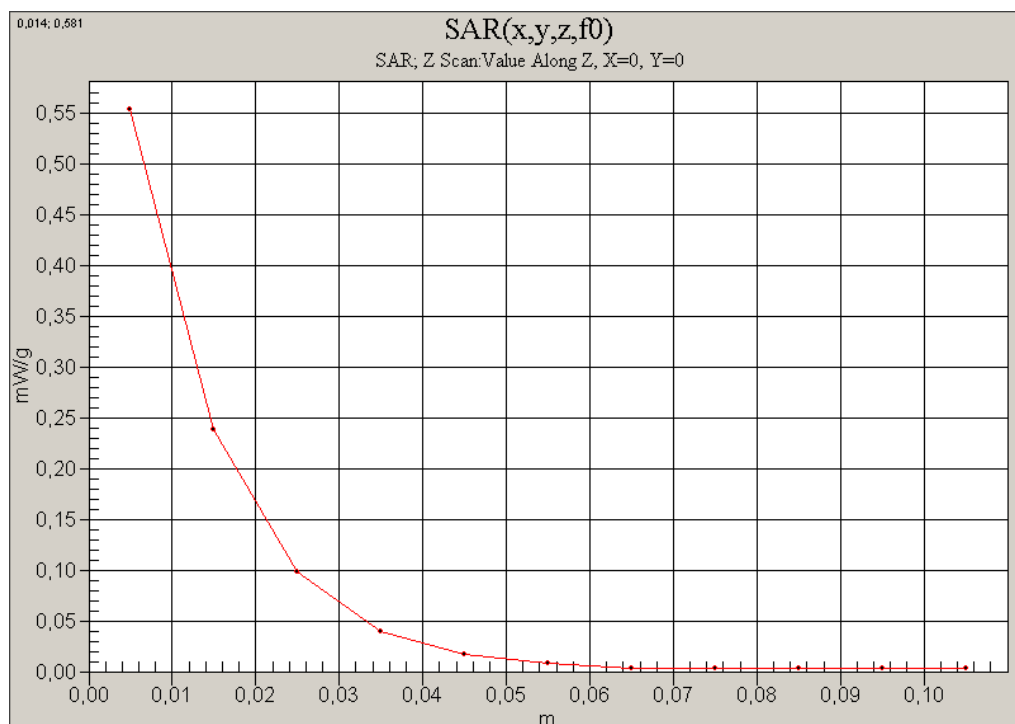


Fig. 28: SAR versus liquid depth, body: PCS 1900, channel 661, headset, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature : 21.1° C).